

| <b>Table 1-1</b><br><b>Geographic Extent of Increased Regional Travel Time</b> |   |   |
|--|---|---|
| <b>Point of Origin</b>   | <b>Travel Time Increase Over 25 Percent</b>   | <b>Travel Time Increase Between a 12.5 to 25 Percent</b>  |
| <b>I-80 enters the Project Corridor</b>  | Area extending throughout western Cook, eastern DuPage and eastern Lake Counties  | Area extending over the remaining portions of Cook, DuPage and Lake Counties not within the over 25 percent category, as well as covers the Chicago central area. |
| <b>I-55/I-80 Intersection</b>  | Area extending over much of the eastern one-third of the region covering the majority of Cook, DuPage and Lake Counties | Area extending over the remaining portions of Cook, DuPage and Lake Counties not within the over 25 percent category  |
| <b>I-55/I-294 Intersection</b>   | Isolated areas throughout western Cook, eastern DuPage and southern Lake Counties                                       | Area extending over much of the northern portion of the region, as well as within and to the south of the Project Corridor.                                       |

provide this direct link to decrease year 2020 regional travel times and improve regional mobility.

### ***System Continuity***

While capacity for north-south travel is needed to reduce travel times and improve regional mobility, adding capacity in a form that integrates into the existing highway network is also needed. This includes providing a Transportation System Improvement that matches the functional design of the system for which it connects. Maintaining continuity in facility type is an important consideration to improving regional mobility by optimizing safety and carrying capacity. Safety and carrying capacity are optimized when two connecting roadways are of the same type and provide continuity in travel speed, access control, roadway width and lane number ([AASHTO, 1990](#)). Connecting dissimilar roadway types, such as an arterial or lower-level facility to a freeway, forces a change in the driving condition and reduces safety and carrying capacity.

#### **1.2.4 Address Local System Deficiencies**

Address local system deficiencies considers the need to enhance accessibility and mobility on the local roadway system. Enhanced accessibility and mobility is needed to improve local travel times within the Project Corridor.

#### ***Local Roadway System Deficiencies***

Local roadway system deficiencies include the lack of a direct roadway for north-south travel, a limited number of bridge crossings over the Des Plaines River and an inefficient roadway network comprising a functional mix of roadways that do not match traffic demand.

The lack of a direct roadway for north-south travel is illustrated in Exhibit 1-11. The Exhibit identifies primary routes for north-south travel within the Project Corridor. The most direct north-south travel routes include Gougar Road to State Street/Lemont Road and Cedar Road to State Street/Lemont Road. Both routes provide one lane in each direction, are limited in capacity and congested. IL Route 53 provides another direct

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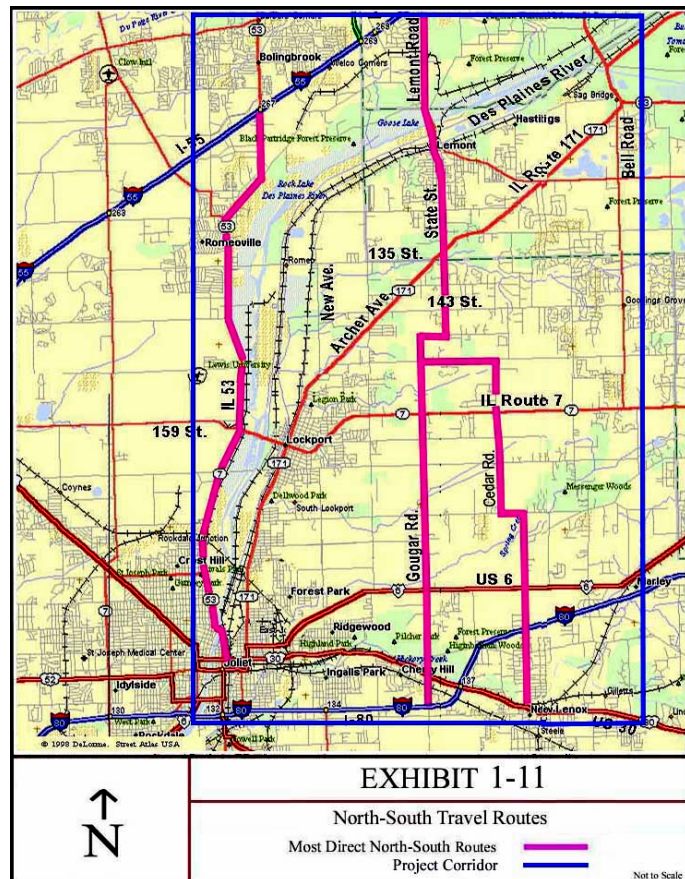
rection, are limited in capacity and congested. IL Route 53 provides another direct north-south route. However, access to this route from the Project Corridor is constrained by an inadequate number and capacity of bridge crossings over the Des Plaines River. The Des Plaines River follows the western and northern borders of the Project Corridor and is a barrier to travel in both the east-west and north-south direction.

Outside of Joliet, four bridges over the Des Plaines River serving the Project Corridor exist at State Street/Lemont Road, IL Route 83, IL Route 7 and 135<sup>th</sup> Street. The bridges at State Street/Lemont Road and IL Route 83 are located at the north end of the Project Corridor and are oriented in a north-south direction. The bridges at IL Route 7 and 135<sup>th</sup> Street are located on the west side of the corridor and are oriented in an east-west direction.

Capacity at the State Street/Lemont Road Bridge is constricted by a reduction in lanes from two to one in each direction within the Village of Lemont. This lane reduction creates a bottleneck resulting in increased travel times. Capacity at the IL Route 83 Bridge is constrained by complex geometry and numerous traffic signals.

Bridges at IL Route 7 and 135<sup>th</sup> Street provide access to IL Route 53, a north-south route at the western fringe of the Project Corridor. However, 135<sup>th</sup> Street terminates at IL Route 171 at the east end, and the utility of the 135<sup>th</sup> Street Bridge for north-south travel is limited because 135<sup>th</sup> Street constricts from four lanes along the Des Plaines River Bridge to two lanes east of New Avenue. This lane reduction limits capacity and creates a bottleneck.

In addition to the capacity limitations caused by the non-direct roadway network and limited bridge crossings over the Des Plaines River, mobility is constrained by a limited functional mix of roadways present within the Project Corridor. Two-lane arterials are the highest functional roadway classification within the corridor. The absence of higher level facilities within the Project Corridor results in the use of two-lane arterial roadways for regional travel. These arterials as a functional class are poorly suited to accommodate such use. This creates congestion and decreases safety and mobility for local travel.



Two-lane arterials are designed to serve through travel in rural areas and as circulatory routes for a limited service area in urban areas [\(AASHTO, 1990\)](#). The roadway network in the Project Corridor was constructed more than 50 years ago when the area was rural. At that time, the use of two-lane arterials as the highest level facility for through traffic was suitable for the lower traffic demands. However, the Project Corridor has undergone rapid development and is now on the urban fringe making the two-lane arterial based local roadway network less efficient.

Area development has and will continue to increase the volume of local trips within the Project Corridor, as well as trips of local origin to suburban job centers and other regional destinations. The limited capacity of the two-lane arterial network to accommodate this demand results in congestion, increased travel times and reduced safety. The addition of regional trips onto arterials resulting from the absence of higher level interstate and free-way facilities for north-south travel within the Project Corridor results in conflicting use between local and regional travel and further degrades roadway efficiencies and safety.

A Transportation System Improvement is needed to add a higher level facility so that the functional mix of roadways is consistent with the type of urban land use developing within the Project Corridor. This upgrade would remove regional trips from two-lane arterials that are intended to serve shorter circulatory trips and place them on appropriately designed higher level arterial facilities. Upgrading the local system will improve safety and local mobility. The number of crashes in the No-Action Project Corridor is projected to increase 43 percent between 1996 and 2020. Mobility, as measured by No-Action travel times, is projected to substantially decrease due to a 151 percent increase in No-Action travel times within the Project Corridor projected by CATS between 1996 and 2020. Increased travel times will result in lost productivity costs amounting to \$85,000 per day or over \$21 million dollars per year (in year 2000 dollars).

Local travel time and safety data for 1996 and 2020 is presented in Tables 1-2 and 1-3. Travel time was defined as the total time of all local travel within the Project Corridor during the 7 to 9 am peak. Local travel time was measured by summing CATS 1996 and 2020 travel times between all TAZ's within the Project Corridor during the 7-9 am peak.

Safety, defined as the number of fatal and non-fatal crashes, was measured using crash data provided by the Illinois Department of Transportation (IDOT) and the Illinois State Toll Highway Authority (ISTHA). The safety analysis used average daily traffic (ADT) along the major roadways, taking into account the mileage that each ADT covered, to derive vehicle miles traveled (VMT) for each Alternative. VMTs were provided by CATS. The VMTs were then multiplied by current crash rates by roadway type reported by IDOT and ISTHA.

| <b>Table 1-2</b><br><b>Percent Change in Crashes within the Project Corridor over 1996</b> |                         |
|--|-------------------------|
| <b>Alternative</b>   | <b>Percent Increase</b> |
| <b>2020 No-Action</b>  | +43%                    |

| <b>Table 1-3</b><br><b>Total Travel Time within Project Corridor During AM Peak</b> |                                  |                         |
|---|----------------------------------|-------------------------|
| <b>Alternative</b>  | <b>Total Travel Time (hours)</b> | <b>Percent Increase</b> |
| <b>1996</b>   | 4,078                            | --                      |
| <b>2020 No-Action</b>   | 10,253                           | 151%                    |

Productivity cost, defined as the cost of time for one person, was determined by multiplying the change in 1996 and 2020 travel time by \$13.76/hour, the av-

| <b>Table 1-4</b><br><b>Productivity Cost saving within Project Corridor During AM Peak</b> |                     |           |                 |                  |
|--|---------------------|-----------|-----------------|------------------|
| Alternative  | Travel Time (hours) | Cost      | Savings (Daily) | Savings (Yearly) |
| 1996   | 4,078               | \$56,100  | --              | --               |
| 2020 No-Action   | 10,253              | \$141,100 | - \$85,000      | - \$21,250,000   |

erage labor hourly rate for a private employee in year 2000 as determined by the Bureau of Labor Statistics. Table 1-4 presents the productivity cost and savings for work trips between 1996 and the year 2020 No-Action scenario. The cost analysis found a 151 percent increase in lost productivity cost between 1996 and 2020 due to increased travel times.

### 1.3 Conclusion

NIPC forecasts the population of Will County to double by 2020, placing Will County among the fastest growing counties in Illinois. County and local land use plans focus this growth within the Project Corridor and designate over 75 percent of Project Corridor for residential and commercial development. The Project Corridor contains some of the only major land available for development within a 48 kilometer (30 mile) radius of the Chicago central area. A Transportation System Improvement is needed to achieve local planning goals of focusing development within the Project Corridor and to achieve regional goals of promoting development as close as possible to the Chicago urban core to keep the urbanized area compact.

While job growth is a goal of local comprehensive plans, forecasts indicate continued job shortages within the Project Corridor through 2020. Suburban job centers in eastern DuPage and western Cook Counties are growing and represent a principal source of jobs for Project Corridor labor. CATS projects travel times from the Project Corridor to these suburban job centers will increase an average 45 percent by 2020. A Transportation System Improvement is needed to reduce these travel times by improving highway access to these job centers from the Project Corridor

In addition, existing interstate routes that serve the Project Corridor are circuitous and do not provide good north-south regional access within the Project Corridor. A Transportation System Improvement is needed to continue the I-290/I-355 beltway to provide a more direct north-south transportation corridor between I-55 and I-80, thereby improving regional mobility.

Finally, Project Corridor land use is rapidly transitioning from rural to urban/suburban. The rural based arterial roadway network lacks the capacity to serve the traffic demand associated with this development. CATS projects average local travel times within the Project Corridor to increase an average of 151 percent by 2020. A Transportation System Improvement is needed to improve local mobility by adding capacity for local travel and by providing an Alternative to local arterials for longer distance regional travel.